

IN THE CLAIMS

The following is a current listing of all the claims. This listing replaces all earlier amendments and listings of the claims, and follows the new format authorized by the U.S. P.T.O. as of December 2002.

Please cancel Claims 11-15 without prejudice or disclaimer of subject matter.

Please amend Claims 1-3, 10, 16, 17, and 18, and add Claims 20-25, to read as follows.

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1. (Currently Amended) An electron-emitting apparatus comprising:
- an electron-emitting device including a first electrode, a second electrode that is provided so as to be insulated from the first electrode, and an electron-emitting film electrically connected to the second electrode; and
- an anode provided at a predetermined distance from the electron-emitting film,
- wherein the first electrode, the second electrode, and the electron-emitting film oppose the anode,
- a distance between the anode and the electron-emitting film is longer than a distance between the anode and the second electrode, and
- a distance between the anode and the first electrode is longer than the distance between the anode and the electron-emitting film.

2. (Currently Amended) An electron-emitting apparatus according to Claim 1, further comprising a first voltage applying means for applying, to the anode, a potential that is higher than potentials applied to the first electrode and the second electrode.

3. (Currently Amended) An electron-emitting apparatus according to Claim 1, further comprising a second voltage applying means for applying a voltage between the first electrode and the second electrode.

4. (Original) An electron-emitting apparatus according to Claim 3, wherein when electrons are emitted from the electron-emitting film, a potential applied to the first electrode is set so as to be at least equal to a potential applied to the second electrode.

5. (Original) An electron-emitting apparatus according to Claim 3, wherein when no electrons are emitted from the electron-emitting film, a potential applied to the first electrode is set so as to be below a potential applied to the second electrode.

6. (Original) An electron-emitting apparatus according to Claim 1, wherein the electron-emitting film includes carbon or a carbon compound.

7. (Original) An electron-emitting apparatus according to Claim 6,
wherein said carbon or said carbon compound includes at least one of
diamond like carbon, graphite, diamond, a carbon nanotube, a graphitic nanofiber, and
fullerene.

8. (Original) An electron source that is formed by arranging a plurality
of electron-emitting apparatuses of any one of claims 1 to 7 and emits electrons from at
least one of the plurality of electron-emitting apparatuses according to an input signal.

9. (Original) An image-forming apparatus comprising:
the electron source of Claim 8; and
an image forming member on which an image is formed by irradiation
with electrons emitted from the electron source.

10. (Currently Amended) An electron-emitting device comprising:
a first electrode arranged on a surface of a substrate;
an insulating layer arranged on the first electrode;
a second electrode arranged on the insulating layer; and
an electron-emitting a film comprising fibers including carbon as a
main ingredient arranged on the second electrode, each fiber including graphens stacked
along an axial direction of the fiber.

wherein the second electrode has two side surfaces that oppose each other in a direction substantially parallel to the surface of the substrate, and the electron-emitting film is arranged so as to be shifted close to one of the two side surfaces.

11.-15. (Cancelled)

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16. (Currently Amended) An electron-emitting device according to Claim ~~11~~ 10,

wherein electrons are emitted from the ~~electron-emitting~~ film when a potential applied to the first electrode is set so as to be at least equal to a potential applied to the second electrode.

17. (Currently Amended) An electron-emitting device according to Claim ~~11~~ 10,

wherein no electrons are emitted from the electron-emitting film when a potential applied to the first electrode is set so as to be below a potential applied to the second electrode.

18. (Amended) An electron source in which are arranged a plurality of electron-emitting devices of any one of claims ~~11 to 17~~ 10, 16 and 17.

19. (Original) An image-forming apparatus comprising:

the electron source of Claim 18; and
a phosphor.

20. (New) An electron emitting-apparatus comprising:

a first electrode arranged on a surface of a substrate;

an insulating layer arranged on the first electrode;

a second electrode arranged on the insulating layer;

a film comprising fibers, including carbon as a main ingredient,
arranged on the second electrode;

an anode disposed at a distance from the film, the first electrode, the
insulating layer, the second electrode and the substrate;

a first power source for applying a necessary electric field, to cause
an electron emission from the fibers, between the anode and a cathode; and

a second power source for applying a necessary electric field, to stop
the electron emission from the fibers, between the first electrode and the second electrode.

21. (New) An electron-emitting apparatus according to Claim 20,

wherein

said first power source forms an electric field necessary for causing
the electron emission from the fibers, by applying to said anode a voltage higher than a
voltage applied to said second electrode and said first electrode, and

said second power source forms an electric field necessary for stopping the electron emission from the fibers, by applying to said first electrode a voltage lower than a voltage applied to said second electrode.

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22. (New) An electron-emitting apparatus according to Claim 20, wherein each fiber is a carbon nanotube.

23. (New) An electron-emitting apparatus according to Claim 20, wherein each fiber comprises a plurality of graphens stacked around an axial direction of said fiber.

24. (New) An electron source that is formed by arranging a plurality of electron-emitting apparatuses, each being an electron-emitting apparatus according to any one of Claims 20 to 23, and which emits electrons from at least one of the plurality of electron-emitting apparatuses according to an input signal.

25. (New) An image forming apparatus comprising:
the electron source of Claim 24; and
an image forming member on which an image is formed by irradiation with electrons emitted from the electron source.
